

CLAIMS

We claim:

- 5 *Sub A9*
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- 25 *Sub A10*
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1. An isolated polynucleotide comprising a nucleic acid sequence shown in Figure 1B.
 2. An isolated polynucleotide comprising a nucleic acid sequence selected from the group consisting of:
 - (a) a nucleic acid sequence of at least 90 nucleotides that is essentially identical to a linear nucleotide sequence of comparable length depicted in Figure 1B;
 - (b) a nucleic acid sequence of at least 90 nucleotides encoding a polypeptide that is essentially identical to a linear peptide sequence of at least 30 amino acids depicted in Figure 1A; and
 - (c) a complement of (a) or (b).
 3. The isolated polynucleotide of claim 2 wherein said nucleic acid is (a).
 4. The isolated polynucleotide of claim 2 wherein said nucleic acid is (b).
 5. The isolated polynucleotide of claim 2 wherein said nucleic acid is (c).
 6. The isolated polynucleotide of claim 2 wherein said nucleic acid encodes a polypeptide comprising an amino acid sequence that is essentially identical to a linear sequence of comparable length shown in Figure 1A.
 7. The isolated polynucleotide of claim 2 wherein said nucleic acid sequence encodes a polypeptide comprising the amino acid sequence shown in Figure 1A.

8. The isolated polynucleotide of claim 2 wherein said nucleic acid encodes a polypeptide comprising an amino acid sequence essentially identical to the entire amino acid sequence shown in Figure 1A.

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9. The isolated polynucleotide of claim 2 wherein said nucleic acid is identical to a linear nucleotide sequence of comparable length contained in the sequence shown in Figure 1B.

10. The isolated polynucleotide of claim 2 which is DNA.

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11. The isolated polynucleotide of claim 2 which is RNA.

12. The isolated polynucleotide of claim 10, wherein the DNA is a full-length cDNA molecule.

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13. The isolated polynucleotide of claim 2 further comprising a heterologous polynucleotide.

14. The isolated polynucleotide of claim 13, wherein the heterologous polynucleotide encodes a heterologous polypeptide.

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15. A pharmaceutical composition comprising the polynucleotide of claim 1.

16. The isolated polynucleotide of claim 1, wherein said polynucleotide is conjugated with a detectable label selected from the group consisting of enzymes, radioactive moieties and luminescent moieties.

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17. A gene delivery vehicle, comprising an isolated polynucleotide of claim 1.

18. The gene delivery vehicle of claim 17, wherein the vehicle is selected from the group consisting of viral vector, a liposome and a plasmid.

19. A genetically engineered host cell comprising an isolated polynucleotide of claim 1.

20. A recombinant method of producing a polypeptide that comprises culturing the genetically engineered host cell of claim 19 under conditions suitable for protein expression, and isolating the expressed polypeptide.

21. An isolated polypeptide encoded by the polynucleotide of claim 1.

22. A pharmaceutical composition comprising the polypeptide of claim 21.

23. An antibody that specifically binds to the isolated polypeptide of claim 21.

24. The antibody of claim 23, wherein the antibody is a monoclonal antibody.

25. A hybridoma cell line that produces the monoclonal antibody of claim 24.

26. The antibody of claim 24, wherein the monoclonal antibody is a humanized antibody.

27. A method for identifying a modulator of the growth factor encoded by the polynucleotide of claim 1, comprising:

- (a) contacting a candidate modulator with said growth factor; and
- (b) assaying for an alteration of growth factor activity and/or growth factor expression.

28. The method of claim 27, where the growth factor activity is characterized by a stimulation of phospholipase C activity.

29. The method of claim 27, where the growth factor activity is characterized by a stimulation or an inhibition of adenylyl cyclase activity.

30. The method of claim 27, wherein the candidate modulator is selected from the group consisting of an antisense oligonucleotide, a ribozyme, a ribozyme derivative, an antibody, a liposome, a small molecule and an inorganic compound.

31. A modulator identified by the method of claim 27.

32. A method for identifying a receptor of the growth factor encoded by the polynucleotide of claim 1, comprising:

- (a) contacting a candidate receptor with said growth factor; and
- (c) assaying for an alteration of growth factor activity and/or growth factor expression.

33. The method of claim 32, wherein the contacting step occurs in a cell comprising said receptor.

34. The method of claim 32, where the growth factor activity is characterized by a stimulation of phospholipase C activity.

35. The method of claim 27, where the growth factor activity is characterized by a stimulation or an inhibition of adenylyl cyclase activity.

36. A receptor identified by the method of claim 32.

37. A method of diagnosing a pathogenic condition or susceptibility to a pathogenic condition that is associated with a genetic alteration in the growth factor encoded by the polynucleotide of claim 1, comprising:
- (a) providing a biological sample of a subject containing nucleic acid molecules and/or polypeptides;
 - (b) determining a genetic alteration associated with the growth factor; and
 - (c) correlating the alteration with a pathogenic condition or susceptibility to a pathogenic condition.
38. The method of claim 37, wherein the genetic alteration is selected from the group consisting of sequence deletion, substitution, translocation, and differential gene expression.
39. A computer readable medium having recorded thereon the nucleic acid sequence of claim 1.
40. A computer readable medium having recorded thereon the polypeptide sequence of claim 21.
41. The computer readable medium of claim 39 or 40, wherein said medium is selected from the group consisting of:
- (a) magnetic storage medium;
 - (b) optical storage medium;
 - (c) electrical storage medium; and
 - (d) hybrid storage medium of (a), (b), (c) or (d).
42. A computer readable medium of claim 41, wherein the magnetic storage medium is selected from the group consisting of floppy discs, hard disc, and magnetic tape.

43. A computer readable medium of claim 41, wherein the optical storage medium is CD-ROM.

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44. A computer readable medium of claim 41, wherein the electrical storage media is random access memory (RAM) or read only memory (ROM).

45. A computer readable medium of claim 41, wherein the hybrid storage medium is magnetic/optical storage medium.

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46. A transgenic animal comprising the gene delivery vehicle of claim 17.

47. A kit comprising the isolated polynucleotide of claim 1 in suitable packaging.

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48. A kit comprising the isolated polypeptide of claim 21 in suitable packaging.